

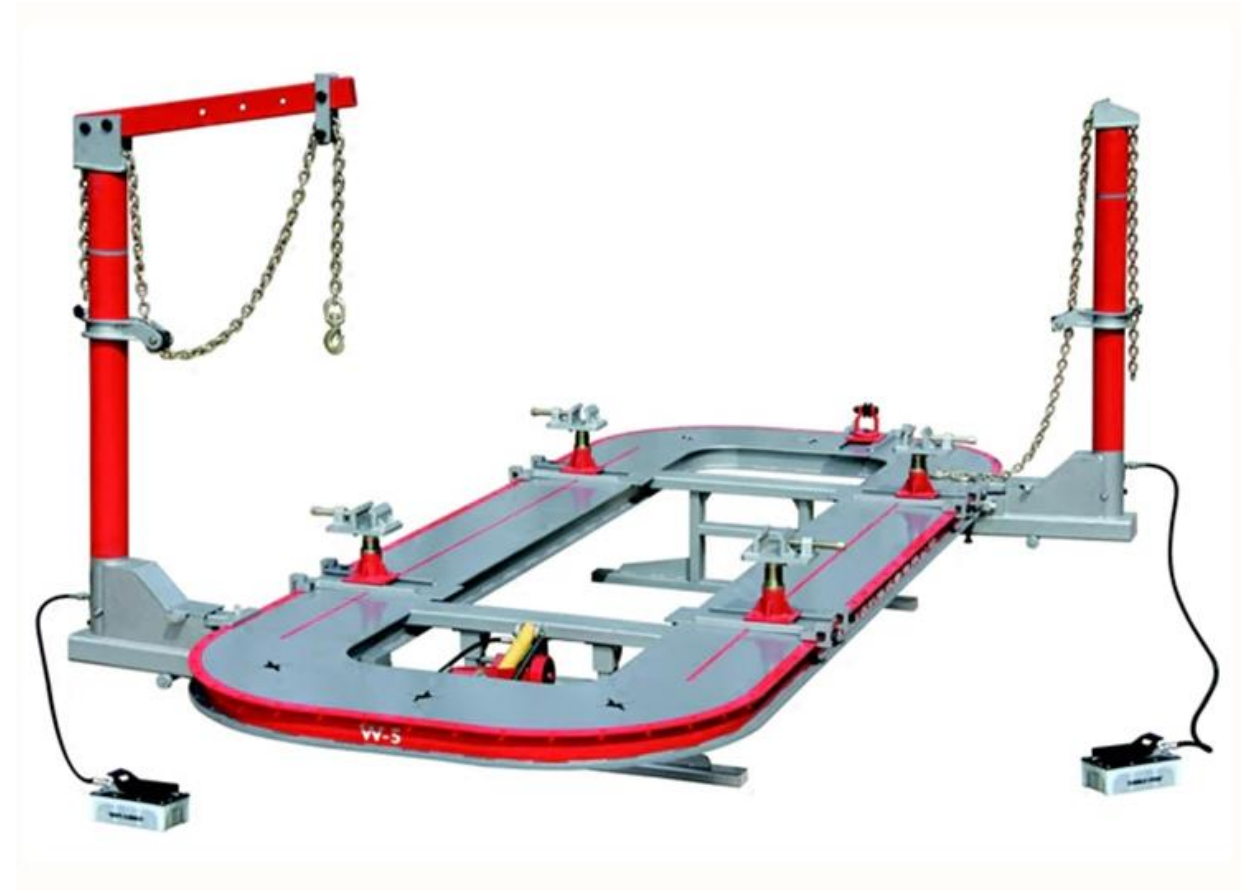
Anchoring & repair planning



Principals of anchoring

Vehicles Must be anchored to a frame system before any pulling or measuring occurs.

- Vehicle structure is secured on a flat plane no weight on any of the suspension components
- Corrective forces can be applied more precisely and without the danger of the vehicle shifting/falling



Principals of anchoring

Solid Anchoring System

- Unibody vehicle usually anchored to bench with pinch weld clamps
- Some vehicles require a fixture system because they do not have pinch welds to clamp onto.

Prepare to Anchor

- Inspect clamp area for corrosion
- Paint and undercoat should be removed from the clamping area
- Protect brake, fuel vapor recovery lines



Types of anchoring systems

Four Major categories of anchoring systems

- In Floor System
- Portable Rack System
- Bench Rack system
- Dedicated Fixture System



Floor anchoring systems

Floor mount systems were the first type of anchoring available. P4s mount into the concrete and the pulling towers are also chained to the floor.

Pros

- Affordable system
- Allows straightening of most vehicles

Cons

- You're always bending down, or lying under the car
- Anchoring chains must be set up properly
- Limited pulling options



Portable Rack anchoring system

Portable racks use a thick steel base to anchor the vehicle to. The base is on wheels so it can be moved around the shop with or without a vehicle mounted to it.

Pros

- Built in lift to raise vehicle onto the P4s
- Does not require a dedicated space
- Platform raises the work height of the vehicle (less Bending over / kneeling)

Cons

- Takes up space when not in use
- Still limited to pinch weld P4 mounting options



Bench rack systems

Bench racks have a built in lifting system allowing the technician to change the height of the rack to best suit the type of repair being preformed.

Pros

- Adjustability
- Lots of different anchoring positions
- More pulling options
- Could have a built in Measuring system

Cons

- More expensive
- Take up a lot more space



Dedicated fixture systems

Multiple fixtures are placed through out the vehicles structure. Ensuring that all those points are held in the correct position. Each make and mode has their own set of jigs that are commonly loaned to the shop to complete the repair.

Pros

- Vehicle is held in almost perfect alignment
- Fixtures can be removed to access areas, the vehicle will still be supported on all the other fixture points
- Any vehicle can be secured

Cons

- Set up time is longer
- More of the vehicle ay need to be taken apart
- Constantly ordering and returning Jig sets
- Expensive system



Hardware & organization

Having a system to keep your parts organized

- Roll around boards like the Caroliner parts in our lab
- Wall mount near the frame rack
- Designated cabinet or tool box

Nuts & Bolts

- The hard ware does wear out, using the impact can accelerate this.
- Replace any hardware that shows signs of wear or binding



Safety Precautions

Safety glasses

- Stops dirt and debris from landing in your eyes while under the vehicle



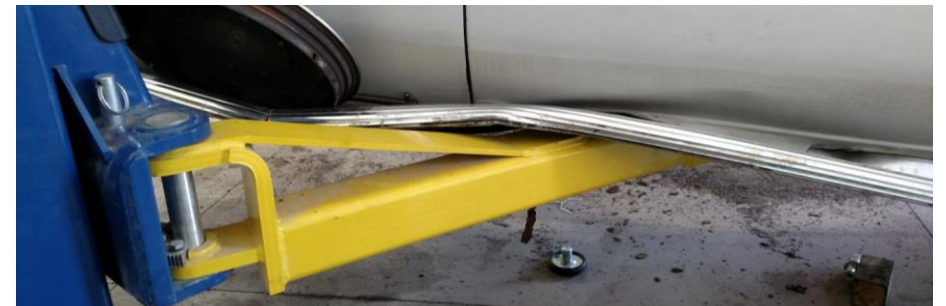
Pinch areas

- Keep your hands out from any area that they could be pinch while setting the vehicle up.



Lifting vehicles

- Try to use designated lifting points, second choice would be rails, suspension attachment points.
- Make sure the jack pad is placed properly and will not slip once you start to lift the vehicle



Repair planning

Analyzing the damage and coming up with a repair plan before the repairs have begun.

- Happens during the estimate process
- 100% disassembly helps locate all parts that need to be ordered.
- Visualize how the accident happened and apply corrective forces in the opposite order to repair the damage



Lets do this one together



- Remove front bumper cover
- Inspect behind bumper for additional damage (washer bottle, air plenum, coolant reservoir)
- Inspect front foam absorber
- Inspect front re-bar



- New bumper cover + refinish
- Refinish fender
- New impact absorber
- New fog light